

COMPLETE LISTING OF CLAIMS
IN ASCENDING ORDER WITH STATUS INDICATOR

Claim 1 (currently amended): A transferring apparatus comprising:
at least two moving bodies with mutual interference potential, at least one moving body being driven by a motor; and
a detection unit for detecting a position of the at least one moving body, the detection unit includes: driven by the motor; wherein
~~the detection unit includes~~ an absolute encoder directly connected to the motor thereby to detect a revolution amount of a rotating shaft of the motor and further output a detection signal,
a driver ~~which receives~~ for receiving the detection signal outputted from the absolute encoder thereby to output a positional information of the at least one moving body, said positional information determined by using an established proportional relationship between a rotational angle of the rotating shaft of the motor and the position of the at least one moving body, and
a controller ~~which receives~~ for inputting a sequence control program to the driver and receiving the positional information outputted from the driver thereby to judge the position of the at least one moving body; and
wherein the driver controls the motor according to the inputted sequence control program,
the controller ~~controls~~ controlling movements of the at least two moving bodies in a manner that the at least one moving body does moving bodies do not interfere with each other any other moving body.

Claim 2 (canceled)

Claim 3 (original): A transferring apparatus as claimed in Claim 1, wherein the positional information outputted from the driver to the controller is identical to a sensor output which is generated by detecting whether the moving body is positioned in a predetermined area when the rotating shaft is rotating and/or stops rotating.

Claim 4 (original): A transferring apparatus as claimed in Claim 1, wherein the moving body is a substrate holder that moves while holding a substrate.

Claim 5 (currently amended): A substrate processing apparatus comprising:
a transferring apparatus including:
at least two substrate holders with mutual interference potential, at least one substrate holder being driven by a motor; and
a detection unit for detecting a position of the at least one substrate holder; holder, the detection unit includes:
~~wherein the detection unit includes:~~ an absolute encoder directly connected to the motor thereby to detect a revolution amount of a rotating shaft of the motor and further output a detection signal;
a driver ~~which receives~~ for receiving the detection signal outputted from the absolute encoder thereby to output a positional information of the at least one substrate holder, said positional information determined by using an established proportional relationship between a rotational angle of the rotating shaft of the motor and the position of the at least one substrate holder; and
a controller ~~which receives~~ for inputting a sequence control program to the driver and receiving the positional information outputted from the driver thereby to judge the position of the at least one substrate holder;
~~wherein the controller controls~~ driver controls the motor according to the inputted sequence control program, the controller controlling movements of the at least two substrate holders in a manner that the at least one substrate holder does ~~substrate holders do not interfere with each other any other substrate holder;~~ and
a processing bath for processing a substrate;
wherein the substrate holder is movable to accommodate the substrate in the processing bath.

Claim 6 (currently amended): A substrate processing apparatus comprising:

a transferring apparatus including:

at least one first substrate holder and at least one second substrate holder with mutual interference potential, the at least one first substrate holder being driven by a motor; and

a detection unit for detecting a position of the at least one first substrate ~~holder~~; holder, the detection unit includes:

~~wherein the detection unit includes:~~ an absolute encoder directly connected to the motor thereby to detect a revolution amount of a rotating shaft of the motor and further output a detection signal;

a driver ~~which receives~~ for receiving the detection signal outputted from the absolute encoder thereby to output a positional information of the at least one first substrate holder, said positional information determined by using an established proportional relationship between a rotational angle of the rotating shaft of the motor and the position of the at least first one substrate holder; and

a controller ~~which receives~~ for inputting a sequence control program to the driver and receiving the positional information outputted from the driver thereby to judge the position of the first substrate holder;

wherein the driver controls the motor according to the inputted sequence control program, ~~the controller controls~~ controlling movements of the at least two substrate holders in a manner that the at least one substrate holder does ~~substrate holders do not interfere with each other any other~~ substrate holder; and

a processing bath for processing a substrate;

wherein the first substrate holder is movable to accommodate the substrate in the processing bath, while the second substrate holder transfers the substrate thereby to give and receive the substrate to and from the first substrate holder, ~~and~~ the second substrate holder is being provided with drive means for moving the second substrate holder and the controller controls the drive means and the motor.

Claim 7 (original): A substrate processing apparatus as claimed in Claim 6, wherein the controller controls the drive means and the motor so that the first substrate holder does not collide with the second substrate holder.

Claim 8 (original): A substrate processing apparatus comprising:
a plurality of processing baths arranged in a horizontal direction to process a substrate therein;
a plurality of first substrate holders provided for the plurality of processing baths respectively, the first substrate holders each moving between a position inside the corresponding processing bath and another position above the corresponding processing bath, in a vertical direction;
a plurality of vertical movement units for moving the plurality of first substrate holders in the vertical direction;
a second substrate holder which holds the substrate and moves to the horizontal direction above the plurality of processing baths;
a horizontal movement unit for moving the second substrate holder in the horizontal direction; and
a control unit which drives the vertical movement units and the horizontal movement unit so that the first substrate holders and the second substrate holder do not interfere with each other, thereby to move the first substrate holders and the second substrate holder.

Claim 9 (original): A substrate processing apparatus as claimed in Claim 8, further comprising a plurality of position sensors which are arranged in respective positions along a horizontal movement of the second substrate holder thereby to detect various horizontal positions of the second substrate holder.

Claim 10 and 11 (canceled)